

SURGERY.

 UNDER THE CHARGE OF

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SUBLIMATE PAPER AS A DRESSING FOR WOUNDS.

GEDEKE (*Centralblatt für Chirurgie*, No. 41) has used with advantage as an antiseptic dressing filtering paper soaked in a two per cent. solution of sublimate with five per cent. of glycerine, and then dried. He has used it after extirpation of the cervical glands, amputation of fingers, and in one case after amputation of the thigh, when it was left in for ten days. He formulates the following conclusions: 1. Filtering paper soaked in a two per cent. solution of sublimate is a valuable dressing. 2. It should be used in from two to eight layers, according to the size of the wound. 3. It is especially indicated in recent wounds. 4. In complicated wounds of the fingers it has the advantage of immobilizing the parts. 5. It should usually be left on not longer than two to three days. 6. In the absence of other antiseptic materials, it will often suffice in a short time to render suppurating wounds aseptic.

 THE TREATMENT OF WOUNDS BY IODOFORM TAMPONS.

DR. F. BRAMANN reports (*Archiv für klinische Chirurgie*, Berlin, 1887) the results of treatment of wounds in Von Bergmann's clinic for some years past. The gauze employed is sterilized by means of steam at 212°, and after drying may be impregnated with an antiseptic solution. The sterilized gauze is used in cases of trifling operations in small wounds. In larger wounds with more profuse secretion, it was thought best to obtain whatever advantage could be derived from the impregnation with corrosive sublimate, especially as the patients and operators are in the immediate vicinity of an audience coming direct from the anatomical rooms. The cotton employed is of late years merely sterilized. The towels, gum cloths, sponges, etc., are treated in a like manner. The silk used in sutures is wound on glass or metal spools, sterilized by steam, and inclosed in metal caskets. The catgut used for deep stitches (stitches of relaxation), and for ligatures, is kept ten to fourteen days in a solution of 4 parts bichloride, 800 of alcohol, 200 distilled water. This is frequently renewed. The catgut is then changed to an alcoholic sublimate solution of 1 to 800 alcohol and 200 parts of water, and is taken direct from this. The preparation of the patient consists in giving full baths, washing the region of operation with soap and water, shaving the part, rubbing the skin with ether, and disinfecting it with from 1 : 1000 to 1 : 200 solution of sublimate. The instruments are kept in a three per cent. solution of carbolic acid. During the operation the wound is often irrigated with 1 : 2000 bichloride solution. In operations in the abdomen, the pleural cavity, the mouth, rectum, and bladder, salicylic acid 1 : 1000, or boric acid 1 : 200 is employed,

and at the end of the operation a solution of iodoform in ether is generally used.

Next to strict antiseptis, the complete stoppage of bleeding is regarded as the chief agent in procuring union by first intention.

When the wound is dry, and the smallest bleeding vessels have been tied, the suture is applied with or without drainage, but only in those wounds which are considered absolutely antiseptic, and have not been infected through previous suppuration or contact with unclean materials. Among the cases treated in this manner are included all extirpations of tumors, removals of breasts, amputations, osteotomies, etc.

In wounds where the bleeding cannot be entirely stopped the formation of a large clot is objectionable, not only on account of the pressure which it may make, as in fractures of the skull, but because of the risk of decomposition and blood poisoning. Although such clots may, through absorption and organization into connective tissue, aid in the process of repair, they sometimes remain fluid for long periods, and during that time are a source of danger. Therefore, when it is impossible to dry the wound absolutely, or where there is the least suspicion that it is not entirely aseptic, after thorough disinfection with 1 : 1000 bichloride solution and with an ethereal solution of iodoform applied to the wound by means of a syringe, it is loosely packed with strips of iodoform gauze of several feet in length, and three to four inches broad. They are applied so that the larger part of each strip lies in the wound, and the ends come out at the angles. The sutures were formerly put in at this time, but this has been abandoned on account of the difficulty in keeping them disentangled, and of their adhesion to the iodoform gauze. The patient is now anesthetized a second time for the application of the sutures. The tamponed wound is covered with sublimate gauze and cotton and an antiseptic bandage. If the secretions make their way through the dressings, the superficial layers are renewed, but the iodoform gauze is allowed to remain undisturbed for two days. If it is then removed by gentle traction on the ends hanging out of the wound, the latter is found clean, unirritated, not reddened, absolutely dry, and it is only very exceptionally that a ligature is required. Careful suturing with or without drainage has resulted invariably in union by first intention, even in those cases in which, for any reason, as great weakness, or for the stoppage of bleeding from large vessels, the tampon has been left in from four to six days. His report of his results is extremely interesting, includes a large number of important cases, and appears to confirm his estimate of the value of this method.

SUBCUTANEOUS INJECTION OF BLOOD AND OF SALINE SOLUTIONS.

VON ZIEMSEN (*Klinische Vorträge*, 1887, No. 3; *Centralblatt für Chirurgie*, No. 41) regards the customary operation of transfusion as attended by so many alarming symptoms, such as fever, rigors, albuminuria, hæmoglobinuria, etc., that it is not only without curative effect, but is even in itself dangerous to life. These dangers do not attach merely to the injection of defibrinated human blood, but also to the direct injection into the vessels of blood containing the unavoidable mixture of fibrinous flocculi and air-bubbles. All the

dangers of these methods are avoided if the blood is injected into the subcutaneous cellular tissue. Von Ziemssen describes his method as follows:

Well-defibrinated blood, treated with the greatest aseptic precautions, and kept at a temperature of from 98.6° to 104° F., is injected deeply into the subcutaneous connective tissue with a small syringe holding between six and seven drachms. The upper part of the thigh is usually selected. The seat of injection is at once vigorously rubbed by an assistant, and this massage is a very important part of the operation. If large quantities are injected, the rubbing is very painful and necessitates the use of an anæsthetic. For each new syringeful, a new puncture is made. The injections are continued as long as the blood-supply lasts. Von Ziemssen has thrown in as much as ten or eleven ounces in fourteen injections. After the operation an ice-bladder is laid over the part and the patient allowed to rest.

The procedure is practically without danger. No bad effects have been seen to follow it. A very slight suppuration occurred in two cases as a consequence of trifling but easily avoided errors of technique.

The subcutaneous connective tissue acts as a filter, which arrests coagula, air-bubbles, and ferments, while the red blood-corpuscles pass easily and quickly through it. After a few days no traces of free blood are found at the site of injection, while in the circulating blood there is a demonstrable increase of the hæmoglobin, which is sometimes even doubled in quantity. A slow decrease follows for several days, but this constituent of the blood is always in larger proportion than it was before the operation. After repeated operations it may reach the normal standard. A coincident increase of the red blood-corpuscles also occurs.

Severe cases of chronic anæmia have by this method been cured in a month. It has not been tried in acute anæmia after severe hemorrhage, but seems to be indicated. When danger of death is imminent, salt-water previously well boiled may be injected to prevent the "emptying of the heart-pump," but should always be followed by the injection of blood.

DEATH DURING ETHER INHALATION.

DR. D. HAYES AGNEW reports (*The Medical News*, Nov. 19, 1887) two cases of sudden death related to etherization, one occurring during anæsthesia for ligation of hemorrhoids, in which he was assisted by Dr. White; the other just before the etherization was begun in a case of herniotomy. In the former death resulted from an apoplexy into the fourth ventricle, the clot resting upon the respiratory centre; in the latter it was synchronous with an attack of vomiting, nothing having been done further than to put the patient in position. Dr. Agnew states his belief in the safety of ether, and that in reported cases of deaths occurring with careful operators, there has been an undetected element more potent than the ether, as in the first of his cases.

The feeling which he expresses as to the safety of ether as an anæsthetic, is the one generally held by practical surgeons. In 1861, a committee of the Boston Society for Medical Improvement reported that after elaborate research they had learned of no case which was unquestionably and unavoidably fatal from the breathing of pure sulphuric ether. They considered two conditions essential to placing the responsibility of any case of death upon the anæsthetic: 1. That the event should occur while the patient is actually

anæsthetized. 2. That the circumstances of its occurrence should be inexplicable by any phenomena of disease or operation. The only one of the forty-one alleged cases collected by them even remotely parallel with that of Dr. Agnew and Dr. White, is that reported by Dr. Alonzo Clark, in which the autopsy disclosed a tumor in the right lobe of the cerebellum, pressing upon the medulla oblongata. The deaths recorded later by Turnbull and Lyman in their treatises, and for a series of years by Jacob (*Brit. Med. Journ.*), are either uncertain in their relation to etherization, or were caused by asphyxia, or more rarely by syncope.

Druet (*Des Contreindications de l'Anæsthesie*, 1880) and Kappeller (*Deutsche Chirurgie*, 1881) give no new light on sudden deaths occurring during anæsthesia, and accompanied by cessation of respiration. The cases of Hunt, Morton, Levis, Hutchinson, Norris, Sims, Emmet, and others, are all instances of death after anæsthesia, at periods ranging from two hours to eighteen days, and possibly associated with nephritis.

In connection with the cases reported by Allin and by Post occurring during operations for tumors of the neck, the observation of Schiff should be remembered, that when animals are anæsthetized, pinching the skin of the neck will at once arrest both respiration and the action of the heart.

In several recorded cases, while herniotomy was being performed, the patient vomited and died. Mr. Marcus Gunn has suggested that as the vomiting of acute intestinal obstruction results from a powerful descending impulse of the vagus and as sudden arrest of the heart's action in diastole is also known to be produced by such an impulse, we may expect to meet with this association of vomiting and sudden heart failure during as well as before and after anæsthesia. Dr. Agnew's second case was possibly of this nature. The same result has occurred even more frequently under other anæsthetics.

Warrington Hayward records a death during etherization from the sudden failure of respiration owing to the occurrence of an epileptiform spasm of the respiratory muscles, whereby the chest was fixed in the position of expiration. Nothing was discovered either at the time, or at the autopsy, which gave any clue as to how the fatality could be avoided.

The doctrine of cerebral inhibition advanced by Brown-Séquard should not be overlooked in its application to the few cases of sudden death during etherization in which the autopsies failed to explain the accident. He has shown that there is an arrest or suspension of function in nerve centres, muscles, and nerves, taking place without demonstrable organic change, and following immediately upon irritation of the nervous system at some point more or less distant from the part in which the effect is observed. He attributes to this cerebral inhibition the cases of sudden death ("death without agony") which are analogous to the loss of intellectual activity that occurs in epilepsy. Such death may be produced in animals by a prick of the ventricle of Arantius in the floor of the fourth ventricle.

The possibility of this form of inhibition having occurred in their case was discussed by Drs. Agnew and White, immediately after the fatal termination, as was also the theory of cerebral embolism, both being suggested by the instantaneous character of the death, which was so evidently of central origin. The autopsy fortunately removed the case from the region of conjecture, and

supplied an easily understood explanation of the occurrence, which although probably unique in its relation to etherization, is not otherwise extraordinary, sudden deaths from apoplexies or embolisms in that locality being not infrequent. It is probable that this patient was in imminent danger, from increased vascular tension, at the time of previous etherization, and that the progressive increase in the brittleness of the arteries during the succeeding twelve months made the difference between the results, as a smaller quantity of ether was used on the second occasion. It would seem that, even in the light of this experience, the risk of such an accident is one against which no caution can prevail, but which must be accepted alike by patient and operator.

REMOVAL OF AN INTRACRANIAL TUMOR; RECOVERY.

PROFESSOR F. DURANTE reports (*The Lancet*, Oct. 1, 1887) the case of a woman, æt. thirty-five, who had successively developed loss of smell, impairment of memory, uncertainty of movement, change of disposition, etc., which led him to diagnose a tumor within the cranium, the pressure of which affected the anterior lobe of the brain, and paralyzed or destroyed the olfactory nerve. Moreover, the displacement of the globe of the eye indicated that the tumor had penetrated the superior arch of the orbital cavity.

He removed a large portion of the left frontal bone, commencing at the superior orbital margin inferiorly, and found that the internal parietes of the frontal sinus had been forced outwardly. The dura mater being now exposed, was found to be perforated by the tumor just opposite the frontal eminence. The tumor did not adhere beyond the internal surface of the dura mater, and its enucleation was comparatively easy, with the adherent portions of the dura mater. The hemorrhage was slight, and easily controlled by a sublimated tampon. The tumor was lobular, of the size of an apple, and weighed about two ounces. It occupied the anterior fossa, at the base of the left cranium, extending to the right and upon the cribriform lamina, which it destroyed. Posteriorly it extended to the glenoid tubercles before the sella-turcica. The left anterior cerebral lobe was greatly atrophied; the orbital arch was much depressed, but not perforated by the tumor. The bleeding was stopped, and the wound united, a drainage tube being left in the cavity, and descending to the left nasal fossa through the opening made in the ethmoid by a prolongation of the neoplasm. The nasal cavity was closed with an iodoform tampon. The operation lasted about an hour.

With the exception of some pressure symptoms produced by interference with drainage, she did very well, and returned to her home in fifteen days, improved as to movement, but not as to memory or sense of smell. Three months later the eye had regained its normal position; smell had returned; intellectual and moral faculties were normal. Three years afterward (the date of report) the patient was in perfect health.

GASTROTOMY FOR THE REMOVAL OF FOREIGN BODIES FROM THE ŒSOPHAGUS.

In a certain proportion of cases foreign bodies, which have been swallowed accidentally, pass the region of the bronchus and become lodged in the gullet